# **PERFORMANCE INDICATORS**



FOR THE GROWTH PLAN FOR THE GREATER GOLDEN HORSESHOE, 2006





# **HOW ARE WE DOING?**

The Growth Plan for the Greater Golden Horseshoe was created in 2006 to guide where and how growth should occur in the region. The Growth Plan's vision for 2041 calls for compact development that makes the best use of our limited land supply and offers a diversity of choices for living, working and enjoying culture. A fast, reliable and integrated transportation system will keep people and goods moving, and the Growth Plan, together with the plans of the Greenbelt, will foster a healthy natural environment and protect vital agricultural lands and natural systems.

It is still early days in the implementation of the Growth Plan, and this document introduces and provides results for 14 performance indicators that will help track implementation of the plan over time. These indicators work with indicators for the Greenbelt Plan to provide a picture of how growth is taking shape in the region.

#### **GREATER GOLDEN HORSESHOE**



# **PLANNING FOR GROWTH**

The Greater Golden Horseshoe is a dynamic and diverse area and one of the fastest growing regions of North America. The region is critical to the economic success of Ontario and Canada, generating a full two-thirds of the province's gross domestic product and one-quarter of the nation's.<sup>1</sup> It is a leading global nexus for employment, trade, culture and research, and attracts people and jobs partly because of its range of economic opportunities and high quality of life.

People from across the country and from around the world move to communities in the region every day. At least one in every three new immigrants to Canada settles in the Greater Golden Horseshoe. In 2011, the region was home to approximately 9 million people and 4.5 million jobs. By 2041, the Growth Plan forecasts 13.5 million people and 6.3 million jobs – an increase of 50 per cent and 40 per cent, respectively. With such an increase comes a greater demand for supporting infrastructure, such as transit, roads, sewers and energy, and a full range of community amenities.

1 Calculated from Statistics Canada's Metropolitan Gross Domestic Product, 2014 and Conference Board of Canada's Metropolitan Outlook 1 & 2, 2014.

#### PEOPLE AND JOBS IN THE GREATER GOLDEN HORSESHOE



# In 2011, the region was home to approximately 9 million people and 4.5 million jobs. By 2041, that is forecast to increase to 13.5 million people and 6.3 million jobs – an increase of 50 per cent and 40 per cent, respectively.

Given this tremendous growth, it is critical that we plan for it in a manner that builds on the region's successes and takes advantage of its many opportunities. If we do not manage strategically and effectively the growth that the region will attract, the area will experience more traffic congestion, more pollution, greater infrastructure challenges, lost farm land and green spaces, and adverse health impacts.

#### **Guiding Growth**

To respond to the challenges presented by extraordinary population growth and the prospect of accelerating urban sprawl, the Ontario government released the Growth Plan for the Greater Golden Horseshoe in 2006. The Growth Plan guides where and how growth should occur in the region and ensures that communities are planned and built to be sustainable and prosperous.

The Growth Plan is an award-winning economic and land use planning initiative that sets a framework for development and environmental protection for 110 municipalities.<sup>2</sup> It works to integrate not only where growth happens, but how it is best supported through wellinformed and forward-looking public infrastructure investments.

Built on an unprecedented consensus across government, the building industry, environmental groups and other key stakeholders, it has established a new standard for future urban form and more complete communities.

The Growth Plan works with other provincial planning initiatives, such as the Provincial Policy Statement, 2014, the Greenbelt Plan, 2005, the Oak Ridges Moraine Conservation Plan, 2002, the Niagara Escarpment Plan and Metrolinx's Big Move. Smart design led by the policies in the Growth Plan can help us move toward low carbon communities, reduced emissions and improved climate resilience. Ontario has set a target to reduce its emissions to 15 per cent below 1990 levels by 2020 and 80 per cent below by 2050. Together these initiatives set a longterm, strategic approach for guiding growth and development in the region, while supporting and promoting economic prosperity, protecting the environment and helping communities achieve their priorities for their residents.

Just as the Growth Plan works with these other provincial planning initiatives to protect important areas of the Greater Golden Horseshoe while accommodating projected growth, the Growth Plan indicators are intended to be read with the indicators for these other initiatives.



Photo courtesy of lain Myrans

2 In 2007, the Growth Plan won the Daniel Burnham Award (American Planning Association), the Award for Planning Excellence (Canadian Institute of Planners) and the Leonard Gertler Award of Distinction (Ontario Professional Planners Institute).

#### OVERVIEW

The Growth Plan contains a series of policies and targets and is organized around the following guiding principles:

Build compact, vibrant and complete communities

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Plan and manage growth to support a strong and competitive economy

•••••

Protect, conserve, enhance and wisely use the valuable natural resources of land, air and water for current and future generations

••••

Optimize the use of existing and new infrastructure to support growth in a compact, efficient form

••••

Provide for different approaches to managing growth that recognize the diversity of communities in the Greater Golden Horseshoe

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Promote collaboration among all sectors – government, private and non-profit – and residents to achieve the vision.

#### **Measuring Progress**

The Growth Plan provides policies that municipalities must follow and targets they must achieve by specific future dates.

Section 5.4.3 of the Growth Plan requires the development of a set of indicators to measure implementation of its policies over time. Indicators and their results will also help inform mandated reviews of the Growth Plan. Some development in the region since the plan was approved in 2006 has been based on approvals received prior to the Growth Plan. Decisions on other development applications in process at the time of the Growth Plan's approval were transitioned and did not have to conform to the Growth Plan. As a result, assessment of performance is challenging at this early stage. Therefore, many of the indicators establish a baseline and will be used in the years ahead to assess implementation of the plan's policies.

#### **Developing the Indicators**

Determining ways to evaluate public policy and the impacts of any policy initiative accurately is both critically important and inherently complex.

To develop the indicators, staff reviewed national and international best practices, met with experts and stakeholders, and developed a set of evaluation criteria. In addition to measuring the Growth Plan's targets and policies, indicators were designed to measure outcomes and to be: easily understood; based on credible data sources available across the region; repeated easily; and manageable in scale, scope and cost.

There are challenges in finding data that is consistent and accurate across all 110 municipalities in the Greater Golden Horseshoe. The indicators reflect the data sources that are currently available to the provincial government. The majority of the data comes from five sources: Statistics Canada, the Municipal Property Assessment Corporation (MPAC), Land Information Ontario, the Transportation Tomorrow Survey, and mapping of Growth Plan geographies from municipal official plans.

Additional sources of data will be explored in the future to continually refine and improve the indicators.

An initial set of indicators was proposed in early 2014. The ministry consulted with other ministries, municipalities, stakeholders and other interested individuals on the proposed indicators, and made changes and additions based on those discussions. For example, two new environmental indicators were introduced, other indicators were amended to reflect new data and analysis, and the designated greenfield area density indicator was significantly revised in partnership with a municipal working group.



#### OVERVIEW

#### THE 14 INDICATORS ARE ORGANIZED AROUND FOUR KEY THEMES:



BUILDING COMPACT AND EFFICIENT COMMUNITIES



CREATING VIBRANT AND COMPLETE COMMUNITIES



PLANNING AND MANAGING GROWTH TO SUPPORT A STRONG AND COMPETITIVE ECONOMY



PROTECTING, CONSERVING, ENHANCING AND WISELY USING NATURAL RESOURCES

#### Reporting on Initial Results or Baseline Data

The indicators in this document are divided into two categories: **core indicators** and **supporting indicators**. Early results, or baseline data, are included with the indicators to help explain how they work.

**Core indicators** are directly linked to specific policies set out in the Growth Plan that have distinct quantifiable goals. The four core indicators relate to the Growth Plan's 1) residential intensification target, 2) urban growth centre density target, 3) designated greenfield area density target and 4) policies regarding densities of major transit station areas. The purpose of the core indicators is to track whether growth is occurring as planned in key areas identified in the Growth Plan. **Supporting indicators** help measure progress in relation to the Growth Plan's more qualitative policies (e.g., the location of major office buildings, planning for a mix of housing), or in relation to the vision and principles embedded in multiple policies throughout the plan (e.g., complete communities). The purpose of the supporting indicators is to track whether the elements and character of urban growth in the region generally reflect the broad policies and vision of the Growth Plan.

#### **Reporting Frequency**

The ministry proposes to report on the results of the data analysis for these performance indicators every five years, following the release of Census/National Household Survey data. Many of the indicators in this document are based on this data, and it is collected every five years (e.g., 2006, 2011, 2016). In addition, it takes time for land use planning policies and decisions to result in actual change or development "on the ground", so it is important to allow for a reasonable interval between reporting periods on indicator results.

The ministry will continue to explore ways to improve the indicators through methodological changes or new data sources, and will also consider new indicators.



# **BUILD COMPACT AND EFFICIENT COMMUNITIES**

The Growth Plan supports the creation of more compact, mixed-use and transit-supportive communities. It also establishes targets for densities and intensification to enable municipalities to plan for and direct the forecast population and employment growth in the most efficient way possible.

The four indicators in this theme will measure progress toward implementing the quantitative targets and related policies of the Growth Plan.



# ACHIEVING INTENSIFICATION

#### The core indicator

The percentage of new residential units constructed in the built-up area of the upper- and single-tier municipalities in the region.

#### Why it matters

The Growth Plan supports making better use of land and infrastructure in the region by directing growth to urban areas that have already been developed where the capacity can best accommodate the forecast population.

The Growth Plan requires that, by 2015 and for each year thereafter, a minimum of 40 per cent of all residential development occurring annually within each upper- and single-tier municipality be within its built-up area.

Alternative targets have been approved for five outer-ring municipalities to reflect local circumstances, as follows:

3 This includes settlement areas with both a delineated and an undelineated built boundary.

Brant County (15%); Wellington County (20%); City of Kawartha Lakes (30%); Haldimand County (32%); and Simcoe County (32%). This indicator tracks municipal progress toward the Growth Plan's intensification targets.

#### How was it measured?

The ministry used 2012 property assessment data, together with a data layer that shows areas inside and outside of the built-up area, to calculate the percentage of new residential dwellings developed within the built-up area<sup>3</sup> of each upper- and single-tier municipality for each calendar year between 2007 and 2010.

#### Results

Initial findings over four years indicate that many municipalities are achieving or exceeding their required intensification target ahead of the 2015 target date. Between 2007 and 2010, upper- and single-tier municipalities across the region achieved an average annual intensification rate of 60 per cent. The intensification rate for the region excluding Toronto is 44 per cent.

#### **Considerations**

Intensification rates can vary widely year-over-year due to construction cycles. Therefore, a four-year period was considered for this initial baseline assessment. There is also a time lag between building construction and assessment. For this and other reasons, these figures may not correspond with municipal records. However, the use of the same data source through time will provide a picture of how intensification rates are changing in response to the policies.







#### BUILD COMPACT AND EFFICIENT COMMUNITIES



## URBAN GROWTH CENTRE DENSITY

#### The core indicator

The number of people and jobs per hectare in the urban growth centres identified in the Growth Plan.

#### **Related supporting indicator**

The ratio of people to jobs in each urban growth centre.

#### Why it matters

The Growth Plan identifies 25 existing downtowns or emerging centres as urban growth centres. Each centre has a minimum gross density target that must be achieved by 2031, ranging from 150 to 400 people and jobs combined per hectare, depending on the centre. Some municipalities have set higher targets than the minimum. Focusing growth to these areas supports the creation of regional focal points and more compact, mixed-use, transit-supportive and energy efficient communities in the region. All of these factors can help in the reduction of greenhouse gas emissions, and are also important in preparing for the impacts of a changing climate.

#### How was it measured?

The number of people and jobs per hectare for each urban growth centre was measured from customized data that Statistics Canada provided from the 2011 Census and National Household Survey.

#### **Results**

The results indicate that urban growth centres are making progress towards their targets. As of 2011, five years after the Growth Plan came into effect, and one fifth of the way to 2031, all but three urban growth centres had reached more than 20 per cent of their 2031 target densities, and three were already at or near their targets. A few centres are almost fully developed, while other centres are still at the early stages of development. Results are a baseline against which to assess further progress.

BUILD COMPACT AND EFFICIENT COMMUNITIES

#### **Considerations**

Although data was available for 2006, Statistics Canada cautions against comparing 2006 and 2011 employment data, because of a change in methodology for collecting place of work data. For this reason, 2011 was used as the base year for this indicator.

The density targets established in the Growth Plan for these urban growth centres are shown by the red line in the graph.

The urban growth centres are at different stages of maturity, and have different characteristics.

#### POPULATION AND EMPLOYMENT DENSITY FOR 25 URBAN GROWTH CENTRES (2011)



Note: A value of 1.0 indicates a ratio of one person to one job.

# MAJOR TRANSIT STATION AREA DENSITY

#### The core indicator

The number of people and jobs per hectare within major transit station areas (MTSAs).

#### Why it matters

Ensuring that existing and future transit is viable is critically important to the Growth Plan. MTSAs are defined in the Growth Plan as the land within a 500-metre radius (approximate tenminute walking distance) of an existing or planned higher order transit station in a settlement area, or of a bus depot within an urban core. The Growth Plan requires municipalities to plan for a mix of uses and to set minimum density targets for intensification areas, which by definition include MTSAs. The density targets are to be consistent with any transit-supportive land use guidelines developed by the Ministry of Transportation.

#### How was it measured?

Based on municipal official plans in 2012, a total of 333 MTSAs were identified in the Greater Golden Horseshoe. The areas were either mapped, or a 500-metre radius was drawn around them as a stand-in if mapping was not available. In many cases, MTSAs aligned with provincial GO stations.

The analysis also included existing stations and stations under construction that were on higher order transit lines (subways, light rail transit or bus rapid transit), even if these were not identified in an official plan.

Once stations were identified, 2011 Statistics Canada data was used to estimate the population and jobs per hectare in each MTSA.

#### Results

This indicator provides a baseline for measuring further changes to densities in MTSAs going forward. The table shows how the density at MTSAs in 2011 compares to selected minimum transit-supportive density standards identified in the Ministry of Transportation's Transit-Supportive Guidelines: 50 people and jobs per hectare for basic transit service; 160 people and jobs per hectare for dedicated rapid transit service (e.g.,



Photo courtesy of MiWay

LRT); and 200 people and jobs per hectare for subway service.<sup>4</sup>

MTSAs are organized by whether they are: 1) an existing higher order transit station (organized by subway, BRT/LRT and GO bus and train); or 2) planned higher order transit stations (includes MTSAs identified in a municipal official plan or under construction). The results indicate that many MTSAs have the potential for significant intensification.

<sup>4</sup> Ministry of Transportation's minimum density thresholds apply to areas within 400-800 metres of a transit station that is capable of supporting different types and levels of transit service.

#### **Considerations**

Over the long term, this indicator will monitor how the densities at MTSAs compare to the target densities that municipalities will set in accordance with the requirements of the Growth Plan.

Some municipalities are still working to set the boundaries of their intensification areas and to establish density targets. This indicator can be recalculated once this work is finalized and the ministry has collected the information on MTSAs and target densities.

In establishing target densities for MTSAs, municipalities will consider each station's long-term function within the municipal and regional transit network.

The density standards set out in MTO's Transit Supportive Guidelines are not intended to apply to all stations on regional commuter lines. For example, a GO station that has been designed to serve a large, dispersed catchment area with base level service may not be considered a prime area for intensification over the life of the Growth Plan. For this reason, some municipalities may choose to assign density targets to GO station MTSAs that are below those outlined in the Transit-Supportive Guidelines for higher order transit, and this may be appropriate given their function. Other stations may be hubs for integrating regional and municipal transit, with frequent service, and the guidelines would call for much higher densities at these stations.

Finally, these results reflect that stations are at different stages of development and that it takes time to see change. For example, the current level of transit service at an MTSA may not support development of higher densities in the short term. However, as more investments are made in transit over time, and the surrounding areas are further developed, some of these stations would fulfill a vital transit function.

#### NUMBER OF MAJOR TRANSIT STATION AREAS

WITHIN SPECIFIED DENSITY RANGES (PEOPLE AND JOBS PER HECTARE IN 2011)

	DENSITY RANGES					
	0-49.9	50-159.9	160-199.9	200+		
Existing subway stations	6	34	4	24		
Existing LRT/BRT stations	11	10	1	0		
Existing GO train stations	49	12	0	2		
Existing GO bus and local stations	10	4	0	0		
Planned MTSAs	68	90	3	5		
Total Stations	144	150	8	31		
Percentage	<b>43.2</b> %	<b>45.0</b> %	<b>2.4</b> %	9.3%		

Note:

Existing: means operating as of 2014.

BRT: means bus rapid transit.

LRT: means light rail transit.

Based on Statistics Canada 2011 Census Population and NHS Place of Work data

#### BUILD COMPACT AND EFFICIENT COMMUNITIES

## DESIGNATED GREENFIELD AREA DENSITY

#### The core indicator

Planned densities for designated greenfield areas.

#### Why it matters

While a significant portion of the region's growth is being directed to urban areas that have already been developed (built-up area), there is still a need for some new development in designated greenfield areas (DGA).

The Growth Plan requires that designated greenfield areas of each upper- and single-tier municipality will be planned to achieve a minimum



density of 50 people and jobs combined per hectare. This density tends to support walking, cycling and transit, a diverse mix of land uses, high-quality public open space and reduced greenhouse gas emissions. The Growth Plan permits the minister to approve an alternative density target under certain circumstances.

#### How was it measured?

Planned densities for the DGA of each upper- and single-tier municipality were taken from adopted upper- and singletier official plans, some of which are not yet in effect.

#### **Results**

Planned densities across the DGA are shown at right.

Planned densities for upperand single-tier municipalities meet the targets in the Growth Plan. Municipalities with approved alternative minimum density targets are planning to achieve those densities.

#### PLANNED DESIGNATED GREENFIELD AREA DENSITIES

FROM UPPER- AND SINGLE-TIER OFFICIAL PLANS

MUNICIPALITY	PLANNED DENSITY (PEOPLE AND JOBS COMBINED PER HECTARE)
INNER RING	
City of Hamilton	50
Region of Durham	50
Region of Halton	50
Region of Peel	50
Region of York	50
OUTER RING	
City of Barrie	50
City of Brantford	50
City of Guelph	50
City of Kawartha Lakes	40*
City of Orillia	42*
City of Peterborough	50
County of Brant	40*
County of Dufferin	44*
County of Haldimand	29*
County of Northumberland	30*
County of Peterborough	40*
County of Simcoe	39*
County of Wellington	40*
Region of Niagara	50
Region of Waterloo	50

Note: City of Toronto has no designated greenfield areas.

\*Values with an asterisk show municipalities in the outer ring for which an alternative density target was approved by the Minister.

#### **Related supporting indicator**

Characteristics of the developing DGA based on lot sizes, mix of housing and estimated densities.

#### Why it matters

The planned densities shown in the table on page 12 are to be achieved across the entire DGA of the upperor single-tier municipality. Each new development in the DGA contributes to the overall planned density, and the ministry is interested in tracking the density and other characteristics of this emerging development. Therefore, we have estimated the density of the existing developing DGA, and assessed the housing mix and lot sizes of the residential development. This provides a snapshot of what the developing DGA looks like today as it progresses towards the planned densities.

#### How was it measured?

The developing DGA includes lands that were built on, or were in the process of being built up to 2011.

The limits of the developing DGA were approximated by selecting and aggregating census dissemination blocks (DBs) with a perimeter size less than 1750 metres. Dissemination blocks are used by Statistics Canada to collect data on population and employment, and this size was chosen based on tests to see which would best approximate developing areas in the DGA.

Statistics Canada provided population counts and employment estimates for the developing DGA, and densities were calculated. MPAC property attributes were used to calculate the percentage of single-detached dwellings, semidetached dwellings, row houses and apartments in the developing DGA, and Land Information Ontario parcel fabric was used to calculate average lot areas by dwelling type.

#### Results

The lands identified as the developing DGA constitute a very small proportion (less than 9 per cent) of the total DGA. Of the parcels in the developing DGA across all Greater Golden Horseshoe municipalities, 95 per cent were developed between 2006 and 2011. The majority of this development was based on approvals that were granted before the Growth Plan came into effect.

On average, lot sizes in the developing DGA as of 2011 are smaller than residential development built in previous decades across the Greater Golden Horseshoe.

Since 1986, there has been a longterm decline in lot sizes across the Greater Golden Horseshoe. However,

#### **DEVELOPING DESIGNATED GREENFIELD AREAS**



lot sizes in the developing DGA between 2006 and 2011 are smaller than lot sizes from previous decades.

Estimated densities of existing development vary considerably. Estimated densities across the entire developing DGA for the inner ring were 51 people and jobs combined per hectare, and across the outer ring were 23 people and jobs combined per hectare. Because of the lag between As the illustration shows, development can occur either as intensification within the built-up area of a municipality, or as new development within designated greenfield areas. Development does not always happen evenly, and it is built out over time. This indicator measures the estimated developing DGA, which can have varying sizes and shapes, as shown in this illustration.

Agricultural and Rural Area

#### SETTLEMENT AREAS:

Designated Greenfield AreaBuilt-up Area

approvals and construction, this development likely reflects approvals that were granted before the Growth Plan came into effect.

#### **Considerations**

Density numbers are based on the best data that is available for the entire area as of 2011: Census population counts and National Household Survey place of work estimates.

#### BUILD COMPACT AND EFFICIENT COMMUNITIES

### CHARACTERISTICS OF THE DEVELOPING DGA – INNER RING

By using a 1750-metre perimeter, this approach focused on smaller dissemination blocks that were most likely to be fully built or development ready. Larger blocks were found to often contain vacant land, and so were excluded, but this may also have excluded some built areas.

The estimated density figures for the developing DGA are gross. The methodology does not yet accommodate netting out natural heritage features and areas as is permitted in the Growth Plan. The developing DGA may contain some vacant land, and may exclude some parks, or open areas such as stormwater management ponds.

Only a small portion of the DGA has been developed, and densities are based on a very small area. One or two developments can have a disproportionate impact on the density results.

Single- and semi-detached dwellings tend to be built before multiplefamily residential development and associated employment uses. As more multiple-family residential units and associated employment uses are built within the developing DGA, estimated densities may increase.

#### HOUSING MIX

Developing DGA Housing Mix in the Inner Ring, 2011



The sets of charts and tables on this page and opposite give a snapshot of the characteristics of development. The tables above and on the opposite page show the size of the developing DGA in inner- and outerring municipalities, and estimated densities.

#### LOT SIZES

Inner-Ring Median Developing DGA Lot Sizes Compared to Historic Lot Sizes (Square Metres)



#### AREA AND ESTIMATED DENSITY

For the Developing DGA in Inner-Ring Municipalities, 2011

	Developing DGA (ha)	Percentage of Total DGA	Estimated Density (people and jobs per ha)
City of Hamilton	219	<b>4.8</b> %	36
Region of Durham	409	<b>3.1</b> %	40
Region of Halton	310	<b>2.6</b> %	60
Region of Peel	671	<b>6.7</b> %	60
Region of York	1,073	5.6%	49
	Estimated F	People Esti	mated Jobs
City of Hamilton	7,40	0	475
Region of Durham	15,21	0	970
Region of Halton	17,43	0 1	,130
Region of Peel	38,10	5 2	2,215
Region of York	48,97	5 3	8,875

### **CHARACTERISTICS OF THE DEVELOPING DGA - OUTER RING**

HOUSING MIX

Developing DGA Housing Mix in the Outer Ring, 2011



LOT SIZES

Outer-Ring Median Developing DGA Lot Sizes Compared To Historic Lot Sizes (Square Metres)



Note that 5% of these lots were developed before 2006.

**AREA AND ESTIMATED DENSITY** For the Developing DGA in

Outer-Ring Municip	alities, 2011				Estimated
	Developing DGA (ha)	Percentage of Total DGA	Estimated People	Estimated Jobs	Density (people and jobs per ha)
City of Barrie	121	8.3%	4,435	195	38
City of Brantford	62	3.8%	2,290	130	39
City of Guelph	156	7.1%	5160	235	35
City of Kawartha Lakes	92	5.8%	665	65	8
City of Orillia	2	0.3%	105	0	55
City of Peterborough	76	<b>5.1</b> %	1,615	120	23
County of Brant	18	0.7%	335	65	22
County of Dufferin	30	3.0%	750	20	25
County of Northumberland	99	3.8%	1,090	115	12
County of Peterborough	73	<b>2.8</b> %	605	15	8
County of Simcoe	432	3.7%	7,280	600	18
County of Wellington	100	3.9%	945	25	10
Haldimand County	28	1.4%	565	10	20
Region of Niagara	242	<b>3.4</b> %	3,800	570	18
Region of Waterloo	488	6.6%	14,180	935	31

Places to Grow – Better Choices. Brighter Future. 15



The Growth Plan promotes the development of complete communities where people can live, work, shop and access services in close proximity. The Growth Plan requires municipalities to plan for a mix of housing types, land uses, employment opportunities and an urban form that supports walking, cycling and transit. These goals are not always associated with specific targets, and in many cases they are to be implemented through official plan policies that are tailored to fit local circumstances.

The indicators in this section are intended to measure attributes of a livable community that support transit and encourage people to walk or cycle to their destinations: a good mix of land uses, amenities that are close enough to walk to, and a well-connected street network.





# MIX OF HOUSING TYPES

#### The supporting indicator

The range and mix of housing types (single-detached dwellings, semidetached dwellings, row and town houses and apartments) that have been completed each year in upper- and single-tier municipalities across the Greater Golden Horseshoe, and the mix of the existing housing stock.

#### Why it matters

A mix of housing types is a component of vibrant and complete communities, and helps to meet the needs for people's daily living throughout a lifetime. This indicator monitors the year-over-year change in the mix of completed housing units by structure type since 2006, as well as the total mix of existing housing in these areas at five-year intervals corresponding with census periods.

#### How was it measured?

Housing completion data from CMHC Housing Starts and Completions Survey was examined to measure the mix of new housing units supplied annually in municipalities across the Greater Golden Horseshoe, and how this mix has changed since 2006.

Statistics Canada data on housing stock for 2006 and 2011 was grouped into the same categories to provide a more complete picture of how the overall stock of housing in the region is changing through time.

#### MIX OF HOUSING - OVERALL STOCK IN THE GREATER GOLDEN HORSESHOE, 2011



#### MIX OF HOUSING - NEW UNITS In the greater golden horseshoe, 2006 and 2013



#### Results

Between 2006 and 2013, there was a shift to higher density development formats across the region, influenced by the strong performance of the condominium sector in the City of Toronto, particularly downtown. There was a corresponding shift in the mix of the existing housing stock between 2006 and 2011. However, given the volume of existing housing, the shift has been more gradual, and shows that, outside of Toronto, singledetached dwellings remain the dominant housing type.

#### **Considerations**

Two different sets of data were used to develop this indicator. The CMHC dataset, which tracks new housing completions, is available annually. The Statistics Canada dataset, from which data on the existing housing stock was derived, is available only at five-year intervals. Direct comparisons cannot be made between the housing completions dataset and the overall housing mix dataset, because their collection methods are different. But together, this data gives a picture of the mix of existing housing in the region, and how it is changing.

#### MIX OF NEW HOUSING UNITS IN TORONTO, REST OF INNER RING AND OUTER RING, 2006 AND 2013



Note: Percentages may not total 100 per cent due to rounding.

#### MIX OF OVERALL HOUSING STOCK IN TORONTO, REST OF INNER RING, AND OUTER RING, 2006 AND 2011

		Single	Semi	Row	Apartment
ΤΟΡΟΝΤΟ	2006	<b>27.3</b> %	7.1%	<b>5.6</b> %	<b>60.0</b> %
IUKUNIU	2011	<b>26.3</b> %	<b>6.9</b> %	<b>5.8</b> %	<b>61.0</b> %
INNER RING Excluding toronto	2006	<b>59.1</b> %	<b>7.0</b> %	<b>11.3</b> %	<b>22.6</b> %
	2011	<b>58.5</b> %	<b>7.2</b> %	<b>12.2</b> %	<b>22.1</b> %
	2006	<b>69.1</b> %	4.7%	<b>6.5</b> %	<b>19.7</b> %
UUTER RING	2011	<b>69.2</b> %	<b>4.6</b> <sup>%</sup>	<b>7.1</b> %	19.1%







Photo courtesy of the City of Brampton

### DIVERSITY OF LAND USES

#### The supporting indicator

The relative diversity of land uses found within urban growth centres and the developing DGA.

#### Why it matters

A richness and diversity of land uses is an important component of a complete community that enables people to live, work and play in vibrant neighbourhoods.

Looking at land use diversity through time will provide a sense of whether implementation of the Growth Plan is resulting in a greater mix of land uses.

#### How was it measured?

The indicator uses the Simpson Diversity Index (SDI) to provide baseline information on the mix of land uses.

The index measures the relative proportion of eight types of land use: commercial, institutional (including recreational facilities and government buildings), industrial, mixed-use, office, open space, low-rise residential and multiple-family residential. The index is calculated for a specific geographic area by comparing the amount of land in each land use category to the amount of land occupied by all land uses. Values for the index range from 0 to 1: a value closer to 0 indicates that an area is more homogenous and may have only one predominant land use, while a value of 1 would indicate that an area has a more varied and balanced pattern of land uses.

While it is not expected that any given community would score a 1 on the scale, an area with a good mix of residential, commercial, office, mixed use, open space and industrial uses would score higher than an area containing a single land use type.

#### **Results**

The figures at right and on the next page show the SDI scores and distribution of land uses for urban growth centres and for the developing DGA of each upper- and single-tier municipality. As would be expected, the SDI values are consistently higher for urban growth centres, which are designed to provide a broader variety of goods and services, than for the developing DGA.

The urban growth centres with the highest diversity values - Guelph, Peterborough, Barrie, St. Catharines, Toronto and Waterloo - are historic downtowns that tend to have many different types of land uses.

It is expected that, through time, the values would increase for the emerging urban growth centres and the developing DGA as more diverse development occurs.



#### SIMPSON DIVERSITY INDEX AND LAND USE CATEGORIES URBAN GROWTH CENTRES



Photo courtesy of lain Myrans

#### **Considerations**

MPAC property codes were used to identify land uses. These codes may not always capture the most recent development or the full range of land use on a property. For example, many uses may be contained in one building with one main property code. Another issue is that some MPAC records did not include a property code; these properties were excluded.

The method for estimating the developing portions of the DGA may also have impacted SDI scores. The process is explained in full on page 13, but it involved aggregating census dissemination blocks in order to best approximate existing development in the DGA. This may have excluded some larger parcels where commercial or industrial uses tend to be located.

Land use diversity alone does not create a vibrant neighbourhood. Vibrancy is influenced by a range of other factors, such as population density, the types of commercial and entertainment uses and pedestrian networks, and the quality of the walking environment. The indicator should be considered along with the indicators that measure other aspects of walkable urban form: street connectivity and community amenities.

#### SIMPSON DIVERSITY INDEX AND LAND USE CATEGORIES DEVELOPING DGA



The figures on this page and the previous page show the relative Simpson Diversity Index values and the relative distribution of land uses for the developing DGA of upper- and single-tier municipalities and for urban growth centres. An SDI value closer to 0 means less diversity, while a value closer to 1 means that an area has a more varied and balanced pattern of land uses.

### COMMUNITY AMENITIES

#### The supporting indicator

The percentage of the dwelling units in selected areas that are within walking distance of a community centre, park, school and shopping opportunities.

#### Why it matters

The Growth Plan encourages the development of complete communities that can meet residents' needs for daily living throughout a lifetime. This includes providing convenient access to an appropriate mix of jobs, local services and a full range of housing, transit and community amenities. The ability to walk to amenities reduces the need to drive and can thus reduce greenhouse gas emissions. This indicator measures the percentage of homes that are within 800 metres (approximate walking distance) of a community centre, park, school and retail uses.

#### How was it measured?

Community centres, parks, retail uses and schools in urban growth centres and the developing DGA were identified and mapped.



Photo courtesy of the City of Brampton

An 800-metre buffer was drawn around each type of community amenity. The number of dwelling units within 800 metres of all four types of community amenities was calculated and converted into percentages of the total number of dwelling units within an urban growth centre or the developing DGA of an upper- or single-tier municipality.

#### Results

As would be expected, a higher proportion of residential units in urban growth centres were within 800 metres of the selected community amenities than in the developing DGA. In addition, in the developing DGA more residential units were within 800 metres of schools and parks than the other types of

amenities, which reflects the character of these areas as newly emerging residential communities.

# PERCENTAGE OF DWELLING UNITS WITHIN WALKING DISTANCE OF COMMUNITY AMENITIES

**Richmond Hill Centre/** 

Langstaff Gateway

#### LEGEND

Percentage of Dwelling Units within 800 metres of Community Amenities

0-20%		
21-40%		
41-60%		
61-80%		
81-100%		

#### **URBAN GROWTH CENTRES**



Yonge-Eglinton Centre

#### DEVELOPING DGA COMMUNITY Centres SCHOOLS RETAIL PARKS City of Barrie City of Brantford City of Guelph City of Hamilton City of Kawartha Lakes City of Orillia City of Peterborough County of Brant County of Dufferin County of Northumberland County of Peterborough County of Simcoe County of Wellington Haldimand County **Region of Durham Region of Halton Region of Niagara Region of Peel Region of Waterloo** Region of York



#### **Considerations**

The indicator should be considered along with the indicators that measure other aspects of walkable urban form: street connectivity and land use diversity.

The use of MPAC property codes for the analysis creates some limitations. MPAC codes typically focus on the main use of a property and may not report on secondary uses, such as parkland associated with a civic building, or retail uses in an office building.



# STREET CONNECTIVITY

#### The supporting indicator

Street connectivity, measured by the number of intersections per hectare and the ratio of connections to intersections (link-node ratio).

#### Why it matters

The Growth Plan requires planning for the development of communities that are transit supportive and pedestrian-friendly and that provide a mix of amenities to which residents can easily walk or cycle. As connectivity increases, travel distances decrease and route options increase, creating a more accessible network that supports these complete community principles.

#### CREATE VIBRANT, COMPLETE COMMUNITIES

#### How was it measured?

The first component, intersection density, is the number of surface street intersections in a hectare. The more intersections, the greater is the degree of connectivity. The Ministry of Transportation's Transit-Supportive Guidelines recommend that municipalities achieve a street intersection density of greater than 0.3 intersections per hectare, with higher street intersection densities of over 0.6 intersections per hectare in mixed-use nodes and corridors.

The second component, link-node ratio, measures the ratio of road segments (links) to intersections (nodes). A higher number means that travellers have increased route choices, allowing more direct connections for access between any two locations. According to this index, a simple box of streets would score a 1.0. A four-square grid of streets would score a 1.33, while a nine-square grid of streets would score a 1.5. Dead-end streets would reduce the index value.<sup>5</sup>

While there is no accepted standard for link-node ratio, some studies recommend that a score of 1.4 is needed to support a walkable community.

5 Taken from Victoria Transportation Policy Institute's Transportation Demand Management Encyclopedia.

The two measures are complementary. A high link-node ratio suggests good connectivity in the sampled area, but if it is accompanied by a low intersection density, then this could suggest that the area includes some large blocks that may not be very conducive to walking. It may also indicate that there is a lot of undeveloped land in the area. In both cases, we would expect to see change as the areas develop.

#### Results

Intersection densities for the developing DGA of inner-ring municipalities range from 0.9 to 1.8 intersections per hectare, and for outer-ring municipalities ranged from 0.5 to 2.1. Values for inner-ring urban growth centres ranged from 0.01 to 0.9 intersections per hectare, and for outer-ring urban growth centres ranged from 0.8 to 1.1. Values were highest for traditional downtowns.

Link-node ratios for the developing DGA of inner-ring municipalities ranged from 0.8 to 1.4, and for outerring municipalities ranged from 0.4 to 1.3. Link-node ratios for urban growth centres in the inner ring ranged from 1.2 to 1.8, and for centres in the outer ring ranged from 0.8 to 1.8.

The charts at right and on the following page show street connectivity, as measured by the number of intersections per hectare, and by the ratio of road segments to intersections (linknode ratio) for urban growth centres, and for the developing DGA.

#### **STREET CONNECTIVITY MEASURES** URBAN GROWTH CENTRES

Link-Node Ratio

Intersections **Downtown Brampton** per Hectare Downtown Brantford Downtown Burlington Downtown Cambridge Downtown Guelph Downtown Hamilton Downtown Kitchener Downtown Milton Downtown Oshawa **Downtown Peterborough Downtown Pickering** Downtown St. Catharines Downtown Toronto **Ftobicoke Centre** Markham Centre Midtown Oakville Downtown Mississauga Newmarket Centre North York Centre - Richmond Hill Richmond Hill Centre/ Langstaff Gateway - Markham Scarborough Centre Uptown Waterloo Vaughan Metropolitan Centre Yonge-Eglinton Centre



2.5

#### STREET CONNECTIVITY MEASURES

Link-Node Ratio

#### INNER-RING DEVELOPING DGA



#### OUTER-RING DEVELOPING DGA



#### **Considerations**

This method assumes that every intersection would be a suitable place for a pedestrian to cross the road. Additional information would be required to assess actual pedestrian connectivity, since data on the location of sidewalks or crosswalks is not consistently available.

To the extent possible, public lanes and alleys were included in the calculation. Highways in the 400 series and other limited access highways that are barriers to pedestrians and cyclists were excluded, as were informal pedestrian pathways, such as those cutting through parks, small laneways or walkways between streets.

Private roads (e.g., in shopping centres) were not captured, and it is recognized that in new subdivisions the road network is still developing.

The indicator should be considered along with the indicators that measure other aspects of walkable urban form: community amenities and land use diversity.

2.5



# PLAN AND MANAGE GROWTH TO SUPPORT A STRONG AND COMPETITIVE ECONOMY

Strengthening the economy of the Greater Golden Horseshoe through better integration of land use planning and infrastructure investment is a key Growth Plan objective. The plan includes policies requiring municipalities to plan for all types of economic activity – industrial, office, retail and other services to support economic development.

The Growth Plan contains policies that direct some forms of employment to locations that support land use and transportation objectives. Providing opportunities to use a variety of transportation modes to access employment will help reduce traffic congestion and free up the road system for goods movement and other economic activity.



#### PLAN AND MANAGE GROWTH TO SUPPORT A STRONG AND COMPETITIVE ECONOMY

# TRANSPORTATION MODAL SPLIT

#### The supporting indicator

The percentage of all trips, and the percentage of morning commute trips, made by car, transit, bicycle or walking for inner- and outer-ring municipalities in the Greater Golden Horseshoe in 2006 and 2011, based on the Transportation Tomorrow Survey (TTS).

#### Why it matters

The Growth Plan promotes complete communities that are well-served by transit, and the development of integrated transportation networks. It requires the region's transportation system to be planned and managed to offer a balance of transportation choices that reduces reliance upon any single mode by promoting transit, cycling and walking, thereby stabilizing and reducing emissions of greenhouse gases in the transportation sector that contribute to climate change. Evaluating morning commute patterns will show travel behavior during hours of peak demand when the majority of people across the region make their journey to work. Analyzing modal split

for all trips will provide a picture of the different modes of transportation that people in the region use for a range of purposes throughout the day.

Over time, monitoring modal share and comparing it to median travel distances (see next indicator) will help to show if the Growth Plan and related transportation investments are giving people viable alternatives to travelling by car, and whether transportation sector greenhouse gas emissions are reducing as a result.

#### How was it measured?

TTS data for 2006 and 2011 was used to establish the baseline modal split for all trip types and for morning commute trips in the inner- and outer-ring municipalities in the Greater Golden Horseshoe.

#### Results

The results provide a baseline of information that will allow comparison over time. The share of trips made by transit during the morning commute is significantly higher than the share of all trips made by transit over a 24-hour period. In 2011, the inner-ring transit modal share during a 24-hour period was 14 per cent, but 23 per cent when considering morning commute trips only. Modal split for all trips remained generally constant between 2006 and 2011, with only a marginal shift toward auto use in the outer ring. Auto modal share for morning commutes at the regional level decreased by one per cent between 2006 and 2011.

#### **Considerations**

The TTS is considered to be the best available source of information on regional travel behavior. The TTS is a survey of all trips taken during a weekday for each member of a household who is 11 or older. The survey is conducted by telephone or web contact, and represents a five-percent sample of the occupied dwelling units (households) across the Greater Golden Horseshoe.

Over time, one would anticipate a shift towards more sustainable modes of transportation as municipalities plan communities that support transit, walking and cycling.



Photo courtesy of the Region of Durham

#### MODAL SHARE IN GREATER GOLDEN HORSESHOE

PERCENTAGE OF DIFFERENT MODES, 2006 AND 2011

#### MORNING COMMUTE

			INNER RING	OUTER RING	ENTIRE REGION				INNER RING	OUTER RING	ENTIRE REGION
		Auto	74%	<b>94</b> %	<b>78</b> %			Auto	<b>78</b> %	<b>89</b> %	<b>81</b> %
	<b>†</b> ‡	Occupants per vehicle	1.118	1.100	1.113		<b>†</b> ‡	Occupants per vehicle	1.253	1.247	1.251
		Transit	<b>21</b> %	2%	17%	0000		Transit	<b>13</b> %	2%	10%
2006	<u>হিন্দ</u> ু	Bicycle	1%	1%	1%	2006	<u>হিন্দ</u> ু	Bicycle	1%	0%	1%
	大	Walk	<b>4</b> %	3%	<b>4</b> %		大	Walk	6%	<b>4</b> %	<b>5</b> %
		Other	0%	0%	0%			Other	<b>2</b> %	<b>4</b> %	3%
		Auto	<b>72</b> %	<b>94</b> %	77%			Auto	<b>78</b> %	90%	<b>81</b> %
	<b>†</b> ‡	Occupants per vehicle	1.107	1.085	1.101		<b>†</b> ‡	Occupants per vehicle	1.256	1.243	1.252
0011		Transit	<b>23</b> %	2%	18%	0011		Transit	14%	3%	11%
2011	<u>হিন্দ</u> ুত	Bicycle	1%	1%	1%	2011	<u>হিন্দ</u> ু	Bicycle	1%	1%	1%
	大	Walk	<b>4</b> %	3%	<b>4</b> %		大	Walk	<b>5</b> %	3%	<b>5</b> %
		Other	0%	0%	0%			Other	2%	<b>4</b> %	2%
						1					

ALL TRIPS

#### Note:

Mode shares are based upon a 24-hour period and all trip purposes, as well as morning commute. TTS morning peak hour home-based work trips data is a subset of TTS 24-hour all trips data. A home-based work trip starting during the morning peak hour is represented in both data tables.

Auto: Includes auto trips, whether the trip was made by a driver or a passenger.

Transit: Includes trips made by GO Transit, joint GO Transit and public transit, and public transit.

**Other:** Includes trips made by school bus, motorcycles, taxis and other modes.

These tables show the different modes of transportation that people in the region take, and how this is changing through time.

# TRIP DISTANCE BY MODE

#### The supporting indicator

Median distance of all trips and median distance of morning commute trips for inner- and outer-ring municipalities, based on the TTS.

#### Why it matters

An integrated and efficient transportation system is needed to support a vibrant economy and high quality of life. When housing, jobs and services are located in proximity to each other, it reduces the need to commute long distances, and ultimately helps free up space on roads, and reduce congestion and greenhouse gas emissions. Evaluating morning commute distances will show travel behavior during hours of peak demand when the majority of people across the region make their journey to work. Analyzing median distances for all trips will provide a picture of travel behavior for a range of purposes, throughout the day.

Over time, monitoring median trip distances for different transportation modes will show if the Growth Plan and related transportation initiatives are giving people viable travel alternatives.

#### How was it measured?

Median trip distances are based on location of trip origin and trip destination gathered through the TTS. Combined median results were reported for municipalities in the inner ring and the outer ring, based on the mode of transportation used for the trip.

#### Results

The results provide baseline information on all trip types that will allow comparison over time. TTS data demonstrates that the median morning commute trip distance in the region is approximately twice as long as the median distance for all trips made during a 24-hour period. In 2011, the median trip distance to work was 9.9 kilometres while the overall median distance for all trips during the day was just 4.9 kilometres.

The median distance of all trips grew slightly from 2006 to 2011 (with the exception of auto trips in the inner ring). The rate of increase in median distance is marginally higher in the outer ring. Results for auto trip distances show that there may be potential for encouraging a switch to sustainable modes of transportation (transit, bicycle) for some of the shorter trips (five kilometres and under).



### MEDIAN TRIP DISTANCE BY MODE IN GREATER GOLDEN HORSESHOE

DISTANCE IN KILOMETRES, 2006 AND 2011

MORNI	NG COMMUTE				ALL TRI	PS			
		INNER RING	OUTER RING	ENTIRE REGION			INNER RING	OUTER RING	ENTIRE REGION
	Auto	10.6	7.8	10.0		Auto	5.4	4.4	5.1
	Transit	10.4	4.4	10.2		🛱 Transit	7.2	3.5	6.9
2006	<b>Bicycle</b>	3.3	1.7	3.0	2006	<b>Bicycle</b>	1.9	1.4	1.8
	🗙 Walk	0.8	0.7	0.8		🗙 Walk	0.7	0.7	0.7
	Other	5.1	2.9	4.2		Other	3.5	4.4	3.8
	TOTAL	10.0	7.0	9.4		TOTAL	5.1	4.0	4.8
	Auto	11.0	8.7	10.5		Auto	5.3	4.8	5.1
	Transit	11.4	4.7	11.2		Transit	8.1	4.3	7.8
2011	<b>Bicycle</b>	3.5	2.5	3.4	2011	<b>Bicycle</b>	2.0	1.7	2.0
	🗙 Walk	0.8	0.7	0.8		🗙 Walk	0.7	0.7	0.7
	Other	4.9	4.6	4.9		Other	3.7	4.2	3.9
	TOTAL	10.4	8.0	9.9		TOTAL	5.1	4.4	4.9
					1				

These tables show how far people are travelling, broken

down by transportation mode, for their morning commute

and for all trips, and how this is changing through time.

#### Note:

Median trip distances are based upon 24-hour trips and all trip purposes, as well as the morning commute. Median distances in kilometres are equivalent to the straight line distance between reported trip origin and destination. TTS morning peak hour home-based work trips data is a subset of TTS 24-hour all trips data. A home-based work trip starting during the morning peak hour is represented in both data tables.

Auto: Includes auto trips, whether the trip was made by a driver or a passenger.

Transit: Includes trips made by GO Transit, joint GO Transit and public transit, and public transit.

Other: Includes trips made by school bus, motorcycles, taxis and other modes.

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#### PLAN AND MANAGE GROWTH TO SUPPORT A STRONG AND COMPETITIVE ECONOMY



Median commute distances, on the other hand, grew more rapidly from 2006 to 2011. The median distance of a transit commute in the inner ring increased by one kilometre, demonstrating a reliance on transit for increasingly long commutes.

#### Considerations

The TTS is considered to be the best available source of information on travel behavior. The TTS is a survey of trips taken during a weekday for each member of a household who is 11 or older. The survey is conducted by telephone or web contact, and represents a five-per-cent sample of the occupied dwelling units (households) across the Greater Golden Horseshoe. Over time, an increase in distances for transit and cycling may indicate that these modes are becoming more viable and attractive ways of getting around. Changes in trip distance should be considered along with changes in modal share – i.e. over time an increase in the auto-based trip distance would need to be assessed in relation to whether it is associated with an increase or decrease in the modal share for auto trips. This would give a sense of how auto-based trips are changing in the region.

# LOCATION OF MAJOR OFFICE SPACE

#### The supporting indicator

The percentage of major office space that has been developed inside urban growth centres and major transit station areas since 2006.

#### Why it matters

New office buildings are a key measure of economic health. Major office developments also play a key role in the vitality of urban growth centres and major transit station areas, helping generate the jobs and necessary density to support transit. Proximity between transit stations and office space can enhance employers' access to workers, and give workers more transportation choice. The Growth Plan directs major office space to urban growth centres, major transit station areas, or areas with existing or planned frequent transit service.

This indicator measures the amount of office space developed or under construction from 2006 to 2012, and whether it was built inside or outside urban growth centres or major transit station areas.



#### How was it measured?

Data from the Real Estate Search Corporation from 2006 to 2012 was used to determine the size and location of all new major office buildings that are larger than 25,000 square feet (approximately 2,323 square metres) in the Greater Toronto Area. The location of these office buildings was overlaid with urban growth centres and major transit station areas to determine the floor area of new office space built inside of these Growth Plan geographies.

#### Results

Findings indicate that since 2006, 16.9 million square feet (1.6 million square metres) of office space was being built or is under construction in the Greater Toronto Area. Of this total, approximately 66 per cent was located within urban growth centres and major transit station areas.

Much of this new office space (47 per cent) is located in urban growth centres and major transit station areas in the City of Toronto. However, since 2006, 20 per cent of the new major office development (25 buildings totalling 3.3 million square feet) was located in urban growth centres and major transit station areas outside of the City of Toronto.

#### **Considerations**

The data captures activity in the Greater Toronto Area, not the entire Greater Golden Horseshoe. Some of these buildings would not be considered major office under the Growth Plan's policies because they are less than 10,000 square metres.





# PROTECT, CONSERVE, ENHANCE AND WISELY USE NATURAL RESOURCES

The Growth Plan works in collaboration with the Greenbelt Plan and other provincial policies and plans to protect, conserve and wisely use natural resources. The policies in the Growth Plan call for the development of more compact and complete communities, which will use land more efficiently and reduce development pressures on important natural areas outside of settlement areas. Natural areas not only protect our natural heritage, but help to mitigate climate change removing and storing carbon. They also help to filter and store water improving water quality and reducing the impact of rain storm events.



# LAND CONSUMPTION

#### The supporting indicator

Ratio of percentage change in size of settlement area to percentage change in planned population and employment.

#### Why it matters

The Growth Plan aims to reduce sprawl and support the wise use of land and resources by requiring intensification and a more compact urban form, and by establishing rigorous requirements for settlement area expansions. It is expected that municipalities will make sure that any expansions to settlement areas are as small as possible, to make the most efficient use of land. By tracking the size of any new settlement area expansions compared to the forecasted population increase, this indicator will help determine whether municipalities are planning to use land more efficiently.

#### How was it measured?

This indicator will be measured in the future only when, or if, there is a settlement area expansion beyond the settlement area boundaries set during the process of bringing official plans into conformity with the Growth Plan. At that time, the ministry will calculate the ratio of the percentage change in the size of settlement area, and the percentage change in planned population and employment. This ratio will then be calculated for each subsequent boundary expansion, if any. Over time, the indicator will show if there is a trend towards more efficient use of land in expanded areas.

#### Results

There are no results for the indicator at this time. The table shows the planned population and employment and the size of the settlement areas for the official plans that are now in effect and in conformity with the Growth Plan. This provides context against which future results can be compared.

#### **Considerations**

The contextual information on planned population, employment and settlement area does not include official plans that have been adopted by council but not yet approved by the Province, or official plans that are before the Ontario Municipal Board. As the rest of the official plans are brought into conformity with the Growth Plan and are approved and in effect, the settlement area sizes and planned population and employment will be added to this contextual information.

Because this indicator can only be calculated after approval of settlement boundary expansions, it will take many years before a trend can be determined. Municipalities will also review and update their official plans at different times. Therefore, this indicator will not be updated for all municipalities across the region at the same time.

#### PLANNED POPULATION AND EMPLOYMENT

Planned Population & Employment to 2031



#### SETTLEMENT AREA



\*Official plans for the Regions of Durham, York, Halton, Waterloo and Niagara, the cities of Toronto, Hamilton, Kawartha Lakes and Barrie, and the counties of Northumberland, Simcoe, Dufferin and Brant are not yet in effect, either because they have not yet been approved or because they have been appealed in whole or in part to the Ontario Municipal Board. Information for these municipalities will become available as the settlement area designations and related population and employment forecasts are approved.

#### PROTECT, CONSERVE, ENHANCE AND WISELY USE NATURAL RESOURCES



### WATERSHED CONDITIONS

#### The supporting indicator

The percentage of hardened/impervious surfaces, natural cover, wetland features, and woodland features in watersheds in the Greater Golden Horseshoe.

#### Why it matters

Several policies in the Growth Plan encourage planning for water and wastewater services and stormwater management at a watershed scale to ensure that water quality and quantity are maintained, improved or conserved.

The amount of hardened surfaces and natural cover can affect water quality and quantity by impacting groundwater recharge and water storage, the amount and speed of surface runoff, erosion and flooding; and the amount of pollutants and nutrients entering water bodies. The amount of hardened surfaces and natural cover can also provide an indication of our ability to mitigate and adapt to climate change. Natural areas are particularly important in terms of their ability to absorb carbon dioxide from the atmosphere. Carbon sinks can also be created or engineered at the community scale to offset emissions from buildings or subdivisions.

The absence or presence of wetland and woodland features provides a more specific assessment of natural cover and impacts to water quality and quantity. Growth and development patterns can impact natural cover and increase hardened/impervious surfaces. Good growth planning and management can minimize the loss of natural cover and reduce the amount of new impervious surfaces.

#### How was it measured?

This indicator was developed using Southern Ontario Land Resource Information System (SOLRIS), Version 1.2, released in April 2008 and based on satellite imagery from 2000 to 2002. The SOLRIS data was broken down into 124 sub-watersheds across the Greater Golden Horseshoe and measured at a one-half-hectare grid resolution.

Hardened/impervious surfaces include paved surfaces and roofs that water cannot soak into. Natural cover consists of woodlands, wetlands, prairies, savannahs and sand barrens.

#### STATISTICS ON GREATER GOLDEN HORSESHOE SUB-WATERSHEDS

	NUMBER OF Sub-Watersheds	PERCENTAGE OF SUB- Watersheds
Sub-watersheds with less than 10% hardened/impervious surfaces	95	77%
Sub-watersheds with more than 40% natural cover	35	<b>28</b> %
Sub-watersheds with more than 10% wetland cover	81	<b>65</b> %
Sub-watersheds with more than 30% woodland cover	17	14%

CHARACTERISTICS OF SUB-WATERSHEDS	PERCENTAGE OF Entire region	
Hardened/impervious surfaces	208,062	<b>6.8</b> %
Natural Cover	908,855	<b>29</b> %
Wetland Cover	441,834	14%
Woodland Cover	466,933	15%

Note: Other natural cover features such as prairies, savannahs and sand barrens, are not reported separately.

A watershed is the region or area drained by a river, stream, or other water body. A sub-watershed is an area drained by a tributary of that water body. The tables above show the amount of hardened/impervious surface and natural cover in Greater Golden Horseshoe sub-watersheds, broken down by area, and broken down in relation to selected goals for watershed conditions.

#### Results

The results provide baseline information against which future changes in watershed conditions can be assessed. The maps on page 40 provide some summary data on these results. Many watersheds have significant natural cover and small amounts of impervious surface; however in watersheds where that is not the case, management may be needed to mitigate impacts on water quality and quantity.

Summary results are presented in relation to minimum guidelines for watershed coverage outlined by Environment Canada. These guidelines provide a starting point to inform planning efforts to maintain the ecological and hydrological integrity in watersheds.

- 10 per cent or less hardened / impermeable surfaces for newly urbanizing watersheds
- 10 per cent or more wetland cover
- 30 per cent or more forest cover.

There are no universally agreed goals for the amount of natural cover or hardened surface in a watershed; and planning authorities should use the guidelines to set coverage goals based on local circumstances.

#### **Considerations**

The SOLRIS inventory is a compilation of data from various sources, including topographic maps, aerial photos and satellite imagery. Computer modelling, visual interpretation and field validation were used to create a seamless inventory for Southern Ontario. No distinction was made between significant and non-significant wetlands and woodlands for the purposes of this indicator, since all woodlands and wetlands contribute to water quality and quantity. Agricultural lands were not included in these numbers.



PROTECT, CONSERVE, ENHANCE AND WISELY USE NATURAL RESOURCES

#### PERCENTAGE OF HARDENED/ IMPERVIOUS SURFACE IN SUB-WATERSHEDS

### PERCENTAGE OF NATURAL COVER IN SUB-WATERSHEDS





### TRANSPORTATION GREENHOUSE GAS EMISSIONS

#### The supporting indicator

Total and per capita greenhouse gas (GHG) emissions ( $CO_2$  equivalent emissions in tonnes) estimated for the transportation sector by census division.

#### Why it matters

The implementation of Growth Plan policies on increasing density, improving transit, creating a more compact urban form, and improving energy efficiency, all have the potential to reduce GHG emissions in a municipality. Through good planning, municipalities can play a big role in curbing emissions.

This indicator provides a baseline to inform policy discussions about how planning can guide or support municipal efforts to reduce emissions.

Compact urban form and complete communities enable people to drive less, which can reduce congestion, and decrease per capita vehicle GHG emissions. PROTECT, CONSERVE, ENHANCE AND WISELY USE NATURAL RESOURCES

#### How was it measured?

Greenhouse gas emissions for private vehicles were calculated based on private transportation fuel consumption data for all of Ontario from Statistics Canada. The amount of fuel consumed per municipality was derived by dividing the number of private vehicles registered in the municipality by the number of private vehicles registered in the province, and then multiplying this ratio by the fuel consumption data for all of Ontario. For example, if a municipality had 15 per cent of the total provincial vehicle registrations, it was attributed 15 per cent of the fuel consumption. The GHG emissions were then projected by applying an emission factor to this quantity of fuel.

For public transportation, emissions were estimated based on fuel usage data obtained from the Canadian Urban Transit Association's Ontario Urban Transit Factbook (2012).

#### PROTECT, CONSERVE, ENHANCE AND WISELY USE NATURAL RESOURCES

#### Results

The results provide a baseline of information that will allow for comparison over time. It is expected that over time, more compact, transitsupportive communities, and more fuel efficient vehicles, will result in an overall decrease in transportation GHG emissions. Three notable transportation patterns emerged in the baseline information:

- The City of Toronto was attributed the greatest amount of total transportation GHG emissions of any single municipality, at 7.5 million tonnes of carbon dioxide equivalents (MtCO<sub>2</sub>e), but had the lowest per-capita transportation GHG emissions, at 2.8 tonnes of carbon dioxide equivalents (tCO<sub>2</sub>e) per capita.
- Upper- and single-tier municipalities in the remainder of the inner ring were attributed a combined total transportation GHG emissions of 16.8 MtCO<sub>2</sub>e, and an overall average<sup>6</sup> of 4.1 tCO<sub>2</sub>e per capita with a range of 3.8 to 4.6 tCO<sub>2</sub>e per capita.
- 6 In this context, the overall average of the rest of the inner ring is calculated as the total emissions in this area divided by the total population in this area. The same calculation was used for the outer-ring per-capita estimates.

 Upper- and single-tier municipalities in the outer ring were attributed a combined total transportation GHG emissions of 10.1 MtCO<sub>2</sub>e, and had the highest per-capita transportation GHG emissions, at 4.7 tCO<sub>2</sub>e per capita with a range of 4.4 to 5.5 tCO<sub>2</sub>e per capita.

The maps at right and on the following page show the total and per-capita GHG emissions from the transportation sector, by census division.

#### TRANSPORTATION GREENHOUSE GAS Emissions in the greater golden Horseshoe, 2012



#### **Considerations**

The indicator assumes a standard rate of vehicle kilometres travelled and fuel consumed for each vehicle in the province. The indicator does not take into account driver behaviour (e.g., how far and how often people drive their car), the cost of driving or vehicle efficiency.

Lower per-capita vehicle ownership rates in some census divisions may, in part, reflect the fact that alternative forms of travel – by bike or transit for example – are more viable. In this way per-capita GHG emissions may be a proxy for urban form.

The approach to calculating this indicator has been used elsewhere and was found to provide results that are within 5 per cent of other accepted methods for estimating transportation GHG emissions in large urban areas. However, due to limitations with this approach, other methods will continue to be considered in the future.

There is a strong potential for the policies of the Growth Plan to influence transportation need and GHG emissions. Further refinements to the indicator could draw a better linkage between urban form and GHG emissions, e.g., to show directly how the integration of home location, work location, and access to public and alternative forms of transportation can reduce travel time, automobile usage and GHG emissions.

In the future, the province will seek to refine the current indicator by exploring access to point-of-sale fuel data and data on vehicle kilometres travelled (VKT). Access to this information would facilitate a more direct analysis of the relationship between urban density and transportation GHG emissions.

#### TRANSPORTATION GREENHOUSE GAS Emissions per capita in the greater golden horseshoe, 2012



#### CONTACT

# CONTACT

Planning for growth means carefully looking ahead and better informing our decisions and actions. It's a broad partnership, involving many diverse and interested parties.

For more information on the Growth Plan for the Greater Golden Horseshoe, 2006, please visit **www.placestogrow.ca**, or contact us.

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# Note regarding graphic maps on pages 1, 7, 35, 40, 42 and 43:

The information displayed in these maps is for illustration purposes only, may not be to scale, and may not accurately reflect approved municipal boundaries.

#### **General Note:**

This document has been prepared solely for the purpose of reporting on performance indicators by the Minister of Municipal Affairs and Housing to measure implementation of the Growth Plan for the Greater Golden Horseshoe, 2006. The information set out in the report does not represent the policy of the Government of Ontario. Reference should be made to the Growth Plan for the wording of approved policies, including defined terms.

Photo courtesy of the City of Mississauga

#### Ministry of Municipal Affairs and Housing

© Queen's Printer for Ontario, 2015 ISBN 978-1-4606-5329-6 (Print) ISBN 978-1-4606-5232-9 (PDF) 2K/03/15 Disponible en français

